

Comparison of EPA State Inventory Summaries and State-Authorred Inventories

EPA's online state inventory summaries attempt to reflect the most recent guidance by recalculating some of the emission estimates supplied by the states. Thus, GHG emissions reported in these summaries may differ from emission estimates reported in the states' inventory documents. An explanation of the differences between EPA and state estimates appears below.

- 1) EPA's state inventory summaries reflect emissions from all sources included in the most recent inventory guidance (listed in Table 1). Emission estimates for additional sources appearing in state inventories are reported in the EPA summaries as emissions from "other sources." Note that EPA's summaries only report emissions from sources for which the state provided activity data; therefore, many of the summaries do not include estimates for all of the sources listed in Table 1.

Table 1. GHG Sources Included in State Inventory Summaries

Sector	Source	Gas(es)
Energy	Fossil Fuel Combustion	CO ₂
Energy	Stationary Source Combustion	CH ₄ , N ₂ O
Energy	Mobile Source Combustion	CH ₄ , N ₂ O
Industry	Cement Production	CO ₂
Industry	Nitric Acid Production	N ₂ O
Industry	Adipic Acid Production	N ₂ O
Industry	Lime Manufacture	CO ₂
Industry	Limestone Use	CO ₂
Industry	Soda Ash Manufacture and Production	CO ₂
Industry	CO ₂ Manufacture	CO ₂
Industry	Aluminum Production	CO ₂ , CF ₄ , C ₂ F ₆
Industry	Electric Utilities and Semiconductors	SF ₆
Industry	Magnesium Production and Casting	SF ₆
Extraction/Mining	Natural Gas and Oil	CH ₄
Extraction/Mining	Coal Mining	CH ₄
Waste	Landfilling	CH ₄
Waste	Waste Combustion	N ₂ O, CO ₂
Waste	Municipal Wastewater	CH ₄ , N ₂ O
Agriculture	Domesticated Animals	CH ₄
Agriculture	Manure Management	CH ₄ , N ₂ O
Agriculture	Rice Cultivation	CH ₄
Agriculture	Agricultural Soils	N ₂ O
Agriculture	Burning Agricultural Waste	CH ₄ , N ₂ O
Land Use	Forest Changes	CO ₂
Land Use	Forest/Grassland Conversion	CO ₂
Land Use	Abandonment of Managed Lands	CO ₂

- 2) EPA's state inventory summaries use updated carbon coefficients (listed in Table 2) from the most recent inventory guidance to translate units of fossil fuel consumption into metric tons of carbon. However, if a state used an alternate carbon coefficient due to state-specific conditions, the summary reflects the state-specific carbon coefficient.

Table 2. Carbon Coefficients Used in State Inventory Summaries

Fuel Type	Carbon Coefficient (lbs C/10 ⁶ Btu)
<i>Coal</i>	
Anthracite	62.1
Bituminous	56.0
Sub-bituminous	57.9
Lignite	58.7
<i>Petroleum</i>	
Asphalt and Road Oil	45.5
Aviation Gasoline	41.6
Distillate Fuel Oil	44.0
Jet Fuel (all types)	43.5
Kerosene	43.5
Liquefied Petroleum Gases	37.8
Lubricants	44.6
Miscellaneous Petroleum Products and Crude Oil	44.7
Motor Gasoline	42.8
Naphtha	40.0
Special Naphthas	43.8
Other Oil	44.0
Unfinished Oils	44.6
Pentanes Plus	40.2
Petrochemical Feed	42.7
Petroleum Coke	61.4
Residual Fuel Oil	47.4
Still Gas	38.6
Waxes	43.7
<i>Natural Gas</i>	
Natural Gas	31.9

- 3) Some states completed their inventories prior to the *1996 Revised IPCC Guidelines*, which included revised global warming potentials (GWPs) for GHGs. These revised GWPs were included in subsequent state inventory guidance and were used to convert tons of gas to metric tons of carbon equivalent for all of the EPA state inventory summaries. The most recent GWPs appear in Table 3.

Table 3. Global Warming Potentials Used in State Inventory Summaries

Gas	100-year GWP
Carbon dioxide (CO ₂)	1
Methane (CH ₄)	21

Gas	100-year GWP
Nitrous Oxide (N ₂ O)	310
HFC-23	11,700
HFC-125	2,800
HFC-134a	1,300
HFC-152a	140
PFCs	9,400
SF ₆	23,900
CF ₄	6,500
C ₂ F ₆	9,200
CO	NA
NO _x	NA

- 4) Several fuel types, such as asphalt and road oil, lubricants, and waxes are not combusted for energy, but have applications where their carbon is stored rather than emitted. EPA's State Inventories account for the carbon stored by these non-energy fossil fuel end uses. Since the method for estimating non-energy carbon storage was recently added to EIIP's State Inventory Guidance and data on state-level non-energy consumption is not always available, only a few states have adjusted their emissions estimates accordingly.

The EPA State Inventories estimate carbon storage for the fuel types shown in Table 4. The percentage of Non-Energy Consumption has been taken from the national fuel consumption data for 1990 found in the *Inventory of U.S. Greenhouse Gases and Sinks*. Carbon storage factors can be found in the *EIIP Workbook*.

Table 4. Non-Energy Fuel Consumption and Storage Factors

<i>Fuel Type</i>	<i>Non-Energy Consumption as a Percentage of Sector Consumption</i>	<i>Carbon Storage Factor</i>
Industrial Sector		
Asphalt and Road Oil	100%	100%
Distillate Fuel	0.6%	50%
Naphtha	100%	75%
Other Oils	100%	50%
Liquefied Petroleum Gases	74.7%	80%
Lubricants	100%	50%
Miscellaneous Petroleum Products	100%	100%
Natural Gas	3.7%	100%
Pentanes Plus	100%	80%
Petroleum Coke	25.5%	50%
Residual Fuel	11.3%	50%
Special Naphthas	100%	0%
Waxes	100%	100%
Transportation Sector		
Lubricants	100%	50%